AMENDMENTS TO THE CLAIMS

CLAIMS:

5   1. (currently amended) A distributed subscriber management method ~~for a user network~~ for

~~performing~~ controlling user authentication ~~for an external network~~ at an access control node located

between a plurality of user networks and ~~, the external network being connected to the access~~

~~control node by means of~~ an access network, the access network being connected to an external

network having an access rights authentication server~~,~~, the method comprising the steps of:

10   (a) receiving, at ~~an~~ the access control node, which is operatively

connected to ~~a~~ the plurality of user networks, a data unit from a user located on one of the plurality

of user networks;

                    (b) determining ~~that~~ whether the data unit requires authentication;

                    ~~(c) authenticating the determined data unit;~~

15   _____ (c) if the data unit requires authentication, determining whether

authentication data is locally stored on the access control node,

                    ~~(d) determining that the authenticated data unit is eligible for~~

~~transmission.~~

20   _____ (d) if the authentication data is locally stored on the access control node,

authenticating the data unit, thus preventing unnecessary traffic interchange between the access

network and the plurality of user networks;

                    (e) if the authentication data is not locally stored on the access control

node, determining whether the data unit is eligible for transmission to the external network; and

25   (f) if the data unit is eligible for transmission, transmitting said data unit

from the access control node to the authentication server of the external network.

2. (currently amended)   The distributed subscriber management method as claimed in claim 1, wherein the ~~authenticating~~ step (d) includes interrogating the user for access information.

5   3. (currently amended)   The distributed subscriber management method as claimed in claim ~~2~~1, wherein the step (f) ~~authenticating includes transmitting the access information to an authentication server of an external network~~comprises a step of receiving, at the access control node, an authentication message for said data unit from the authentication server to permit the user to access the external network.

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4. (currently amended)   The distributed subscriber management method as claimed in claim ~~3~~1, wherein the step (b) comprises a step of searching the authenticated data unit locally stored on the access control node.

15   ~~authenticating includes transmitting an authentication message from the authentication server to the access control node to permit the user to access the external network.~~

5. (currently amended)   The distributed subscriber management method as claimed in claim ~~4~~2,

20   further including encrypting the access information at the access control node prior to transmitting the access information to ~~; and decrypting the access information at~~ the authentication server of the external network.

25   6. (currently amended)   The distributed subscriber management method as claimed in claim 3, wherein ~~the authentication server of the external network employs remote authentication dial-in user service protocol~~ the step of receiving, at the access control node, the authentication message for said data unit comprises a step of storing authenticated data unit in a local authorization table on

the access control node.

7. (currently amended)   The distributed subscriber management method as claimed in claim 3~~6~~, wherein the step (b) comprises searching the authenticated data units stored in the local

5   authorization table on the access control node ~~the authentication server of the external network employs password authentication protocol~~.

8. (currently amended) The distributed subscriber management method as claimed in claim 3, wherein the step (f) comprises a step of communicating with the authentication server employing

10   one or more of standard authentication protocols selected from the list consisting of remote authentication dial-in user service protocol, password authentication protocol, challenge handshake authentication protocol, and terminal access controller access control system protocol ~~authentication server of the external network employs challenge handshake authentication protocol~~.

15   9. (currently amended) The distributed subscriber management method as claimed in claim 3~~1~~, wherein the step (d) comprises employing one or more of standard authentication protocols selected from the list consisting of remote authentication dial-in user service protocol, password authentication protocol, challenge handshake authentication protocol, and terminal access controller access control system protocol at the access control node ~~authentication server of the external~~

20   ~~network employs terminal access controller access control system~~.

10. (currently amended)   The distributed subscriber management method as claimed in claim ~~1~~3, wherein the step (f) further ~~including~~ includes packet ~~labelling~~ labeling of the data unit.

25   11. (currently amended)   The distributed subscriber management method as claimed in claim 4~~6~~, wherein the step of receiving the authentication message further ~~including~~ includes determining the contents of the authentication message at the access control node.

12. (currently amended)   The distributed subscriber management method as claimed in claim ~~11~~1,

wherein the step (e) comprises examining the content of the authenticated data unit at the access control node ~~further including dropping the data unit if the contents indicate rejection~~.

5   13. (canceled)   ~~The distributed subscriber management method as claimed in claim 11, further including examining the authentication message for authenticity.~~

14. (original)   The distributed subscriber management method as claimed in claim 1, further including collecting statistical usage information at the access node.

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15. (currently amended)   An integrated access device, for placement between a user network and an external network, the external network having an access rights authentication server, <u>the integrated access device</u> comprising:

                   a user network interface for operatively connecting to a plurality of user

15   networks to receive data units from the plurality of user networks;

                   an authentication agent, operatively connected to the user network

interface for <u>locally</u> authenticating, ~~authorising~~ <u>authorizing</u> and forwarding data units received from

the plurality of user networks;

                   an external network interface, operatively connected to the authentication

20   agent, for forwarding data units <u>locally</u> ~~authorised~~ <u>authorized</u> by the authentication agent to ~~an~~ <u>the</u>

external network<u>; and</u>

                   <u>means for communicating with the access rights authentication server of</u>

<u>the external network.</u>

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16. (original)   An integrated access device as claimed in claim 15, wherein the user network interface includes a plurality of ingress cards and the external network interface includes an egress card.

17. (currently amended)   An integrated access device as claimed in claim 15, wherein the authentication agent includes a local ~~authorisation~~ authorization table for ~~authorising~~ authorizing data units.

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18. (original)   An integrated access device as claimed in claim 15, wherein the authentication agent includes network address assignment and release means.

19. (currently amended)   An integrated access device as claimed in claim 15, further including

10   service level enforcing means~~.~~, network resource management means, means for statistical usage collection, and alarm monitoring means.

19. (canceled)   ~~An integrated access device as claimed in claim 15, further including network resource management means.~~

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20. (canceled)   ~~An integrated access device as claimed in claim 19, further including means for statistical usage collection means.~~

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~~21~~20. (currently amended)   An integrated access device as claimed in claim ~~20~~17, ~~further including alarm monitoring means.~~ wherein the means for communicating with the access rights authentication server comprises:
                          means for determining whether the data unit is eligible for transmission
25   from the access control node to the authentication server of the external network;
                          means for transmitting the data unit from the access control node to the authentication server of the external network;

means for receiving, at the access control node, an authentication message for said data unit from the authentication server to permit the user to access the external network; and

means for storing authenticated data units in a local authorization table on

5   the access control node.

21. (currently amended) An integrated access device as claimed in claim 15, wherein the authentication ~~client~~ agent includes a password authentication protocol ~~client~~.

10   22. (currently amended) An integrated access device as claimed in claim 15, wherein the authentication ~~client~~ agent includes a challenge handshake authentication protocol ~~client~~.

23. (currently amended) An integrated access device as claimed in claim 15, wherein the authentication ~~client~~ agent includes a terminal access controller access control system ~~client~~.

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24. (currently amended) An integrated access device as claimed in claim 15, wherein the authentication ~~client~~ agent includes a remote authentication dial-in user service protocol ~~client~~.

25. (new)   An access control node, for placement between a plurality of user

20   networks and an access network, the access network being connected to an external network having an access rights authentication server, the access control node comprises the integrated access device claimed in claim 15.